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U. S. Department of Agriculture.

HOUSEKEEPERS' CHAT Wednesday, July 29, 1936

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Subject: "FRUIT JUICE RESEARCH." Information from the Bureaus of Chemistry and Soils, Plant Industry, and Home Economics, United States Department of Agriculture.

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Those among my listeners who like to know what is going on in the world of science will doubtless not be surprised to learn that three groups of scientists in the United States Department of Agriculture do research with fruit juices. One group is working with fruit varieties -- trying to find the right varieties of apples for cider-making, the best grapes for grape juice, and so on. Another group studies the processing of fruits after they come into the kitchen, the bottling of juices of fruits that grow on farms, and making jelly from various juices.

Still another group of scientists deals with the commercial preservation of fruit juices. They work in field laboratories where there is an abundance of a given fruit, and there study the possible commercial uses of these fruits and their products.

For example, in Florida and Texas these laboratories are concerned with orange and grapefruit products. The men working at Winterhaven, Florida, have perfected a method of canning orange juice by which the natural fresh flavor is almost entirely retained. Research on canning grapefruit juice has also resulted in constant improvement in flavor. In Florida the work with citrus fruits has led to studies of orange and grapefruit wine, and the making of brandies and cordials. Grape growers in the East and in the West produce quite different varieties of grapes from which table wines of many kinds are made. Scientists are carrying on studies to determine the best varieties of grapes for each of these types of wine, and the commercial processes that will result in the most desirable products. This work benefits the individual household by improvement in the quality of these fruit beverages that come on the market.

Another type of research work carried on with fruit juices is the making of vinegar. Many tons of fruit go to waste on farms every year that could easily be made into good vinegar for home use. Some of the fruit vinegars, like cider vinegar, retain a little of the characteristic flavor and bouquet of the fruit from which they are made. One of the nicest of these is old-fashioned raspberry vinegar. Would you like to know how to make it?

"Into a 4-gallon jar mash 16 quarts of good ripe raspberries," says the U. S. Department of Agriculture. "Dissolve one cake of compressed yeast in a little of the berry juice and add to the jar. Stir up well and let stand in a warm place with cheesecloth over the top to protect it from insects. Stir it every day. It will require about a week until the alcoholic ferment is over. Then strain off the juice from the pulp and seeds, return it to the jar and add some mother of vinegar -- about 1 quart to 1 gallon of juice. Cover and let stand in a warm place. After it has reached the required stage of acidity, filter through a cloth and bottle. It takes from 3 to 6 months for the vinegar to become sufficiently acid, and after it is bottled it should stand for about 6 months before being used, to ripen."

You may want to know what to do with raspberry vinegar, after you've made it. Add a tablespoon or two to a glass of ice water, and sweeten to taste for a delicious warm weather drink. Or use it to make fruit salad dressing.

The Department scientists recommend bottling at home all the pleasantly acid summer fruit juices that make good hot weather beverages. Red and black raspberries, currants, late cherries, loganberries, plums, grapes, and apples are familiar examples. Fruit juices are the easiest of all products to can or bottle, since the acid they contain makes it possible to use pasteurizing temperatures, considerably below the boiling point, and still have a product that will keep. It is not necessary to sweeten fruit juice at the time of bottling. Some varieties of grape juice are much better unsweetened.

To extract the juice from berries and other small fruits, mash a small portion of the fruit in a kettle and then stir while you heat it just to the simmering point (185 degrees Fahrenheit). Take it off the fire, and strain through a heavy jelly bag. The less juicy fruits must be cooked a little longer at the simmering point, and they generally need a small amount of water - about a fourth of a cup to a pound of fruit. If you decide to add sugar, one cupful to a gallon of juice is ample. The sugar helps retain the color and improves the flavor of the juice but is not necessary for preservation.

Reheat the strained and sweetened juice to the simmering point, pour into hot sterilized bottles or glass jars, seal, and process for 10 minutes at the simmering point.

The bottles must be sealed tight before they are processed, but clamps on glass jars are left up. The jars or bottles should be placed on a rack or folded towel in the water bath. Do not crowd them. The water should come at least two inches over the tops. After 10 minutes, remove the bottles or jars and cool.

If the bottles are corked, dip the cork and top of the bottle in semi-liquid paraffin or sealing wax. Store in a cool dry, dark, place. Glass jars are sealed and stored like any other canned fruit.

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